

## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
31 December 2003 (31.12.2003)

PCT

(10) International Publication Number  
**WO 2004/001669 A2**

(51) International Patent Classification<sup>7</sup>: **G06T 5/00**

(21) International Application Number:  
PCT/EP2003/006006

(22) International Filing Date: 7 June 2003 (07.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
0207759 24 June 2002 (24.06.2002) FR

(71) Applicant (for all designated States except US): **EAST-MAN KODAK COMPANY** [US/US]; 343 State Street, Rochester, NY 14650 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **RISSON, Valéry, Jean, Eugène** [FR/FR]; Kodak Industrie, Département

Brevets, CRT - Zone Industrielle, F-71102 Chalon sur Saone Cedex (FR). **DUPONT, Jean-Fabien** [FR/FR]; Kodak Industrie, Département Brevets, CRT - Zone Industrielle, F-71102 Chalon sur Saone Cedex (FR).

(74) Agent: **WEBER, Etienne**; Kodak Industrie, Département Brevets, CRT - Zone Industrielle, F-71102 Chalon sur Saone (FR).

(81) Designated States (national): AU, CA, CN, IN, JP, US.

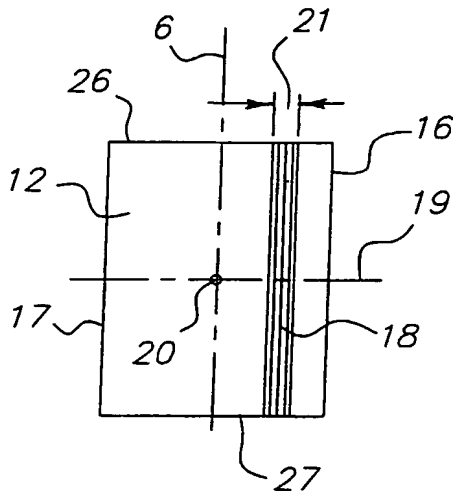
(84) Designated States (regional): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: PROCESS OF SPATIAL COLOR RESTORATION OF AN IMAGE



(57) **Abstract:** The present invention is in the technical field of imaging. The process of the invention enables the spatial color alterations of the silver image to be taken into account according to one of its main axes (19). The process of the invention enables the altered or faded colors of the silver image to be restored automatically, without depending on the skills of an operator to perform the color restoration treatment. The digital image (12) is divided into adjacent pixel strips (18), arranged perpendicular to the direction (19) according to which the color alteration occurs. For each of these strips (18), optical density distributions of each pixel are calculated and compared with reference optical density values. The process of the invention enables the automatic correction of all the strips (18) comprising the altered pixels, by applying a linear transformation enabling the transformation of the optical density values of the altered pixels, into the optical density values of a pixel strip of least degradation. The process of the present invention is used in the technological field of the restoration of color photographic images.